

were killed in four days with 0.0005 cc of the filtrate of a seventy-two hour culture. A protective serum was produced in rabbits against the homologous toxin. The author states that this is the first time that *B. botulinus* has been isolated from cheese, that a soluble bacterial toxin has been detected in cheese and that *B. botulinus* has been isolated in America.

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**Studies on the Chemotherapy of the Experimental Typhoid Carrier Condition.**—Appreciating the menace of typhoid carriers to society and conceiving the probability that certain anilin derivatives may be toxic to the typhoid bacillus in vivo, BECKWITH (*Jour. Infect. Dis.*, 1921, 29, 495) administered auramine, acriflavine, proflavine, pyronine G and new fast-green 3 B—all of which showed bactericidal action in bile and serum—intravenously into rabbits in which the typhoid carrier state had been produced by the Gay-Claypole technic. It was found that acriflavine and proflavine were more germicidal in the presence of serum than in its absence, while bile usually depressed the activity of the stains as much as serum. All the stains save new fast-green 3 B, although bactericidal to *B. typhosus* in vitro, did not sterilize the gall-bladders when introduced intravenously. Auramine was too toxic and the others were excreted through the urine rather than the bile. The writer believes that new fast-green 3 B "offers possibilities as a germicide in vivo for *B. typhosus* in gall-bladders of experimental rabbit carriers," inasmuch as it retains its activity in serum and bile and is excreted through the bile when administered intravenously, although it does not clear up the condition in all animals. The dye changes readily from the sol to the gel state and may be very toxic to the animal.

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**Comparison of Formol and Wassermann Reactions in Diagnosis of Syphilis.**—Following the report of Gaté and Papacostas, that pooled syphilitic serum was coagulated by a small quantity of formalin, while nonsyphilitic serum failed to give the reaction, ECKER (*Jour. Infect. Dis.*, 1921, 29, 359) conducted 500 comparative tests, employing the ice-box method for the Wassermann reaction with syphilitic fetal liver, normal human and beef-heart antigens. The technic of "formol" method consisted in adding two drops of Schering's or C. P. formalin, in both acid and neutralized solution, to 1 cc of clear serum, shaking gently in tubes plugged with cotton or more tightly and incubating for from twenty-four to forty-eight hours at temperatures of either ice-box, room or 37° C. Whereas, in a series of 400 comparative tests Gaté and Papacostas found agreement in 85 per cent, only 37.09 per cent of the total number of positive reactions agreed in the writer's series, which compared more closely with the 27.27 per cent as found in a similar work by Pautot. Forty-four per cent of the formol positives were of the + type, and of these, 13 were positive by the Wassermann. The writer concludes that "the reaction as it stands is of no diagnostic value because of its failure to react in clinically and serologically clear-cut cases of syphilis and the occurrence of positive reaction in the absence of the disease."

## HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

MILTON J. ROSENAU, M.D.,

PROFESSOR OF PREVENTIVE MEDICINE AND HYGIENE, HARVARD MEDICAL SCHOOL,  
BOSTON, MASSACHUSETTS,

AND

GEORGE W. MCCOY, M.D.,

DIRECTOR OF HYGIENIC LABORATORY, UNITED STATES PUBLIC HEALTH SERVICE,  
WASHINGTON, D. C.

**Tuberculosis of Husband and Wife.**—BARNES (*Am. Rev. Tuberc.*, 1921, 5, 670) states that the histories of 229 consecutive widowed patients admitted to the Rhode Island State Sanatorium, 1905 to 1921, show that 93, or 40 per cent, lost their consorts by death from tuberculosis, a tuberculosis mortality over three times that of the married people of the community. Immunity from many diseases is short-lived and until much more convincing evidence of permanent immunity against tuberculosis conferred by childhood infections is forthcoming, a cautious logic will not accept the confident statements that are being made as to the impossibility or rarity of adult infection.

**The Etiology of Typhus Fever.**—The past twelve years have witnessed an energetic investigation into the precise nature of the virus of typhus fever. A number of bacteria have been brought forward as causal agents of the disease. Two of these attracted special attention; namely, *Rickettsia prowazekii* of da Rocha-Lima and *B. typhi exanthematici* of Plotz. Several years ago, OLITSKY (*Jour. Infect. Dis.*, 1916, 19, 811) was led to accept the etiological relationship of Plotz's bacillus to typhus fever by the fact that he found specific antibodies against the organism in the blood of typhus patients; that with it, it was believed, experimental typhus in guinea-pigs had been induced and that a similar bacterium was recovered from typhus-infected lice. Olitsky (*Jour. Exp. Med.*, 1921, 34, 525) revises his judgment concerning Plotz's bacillus, for he finds that in the early stages of typhus fever in guinea-pigs the typhus virus can be obtained wholly free from admixture with any of the ordinary bacteria. Furthermore, the body of the guinea-pig reacting to the virus of typhus fever is readily invaded by a variety of bacteria whose presence complicates the typhus infection, but which have no etiological relation to the specific disease, typhus fever. Olitsky showed that during the period of incubation and before the onset of fever no ordinary bacteria appear in the cultures, while on the first day of the febrile reaction different bacteria were found in 6 of 26 guinea-pigs cultured; on the second day, in 10 of 16; on the third day, in 3 of 4; and on the fourth day in cultures of all of the 4 guinea-pigs observed. The findings indicate that the virus of typhus fever is distinct from ordinary cultivable bacteria, and, as the disease set up by the virus progresses, the infected guinea-pigs become subject to